

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property  
Organization  
International Bureau



(43) International Publication Date  
24 February 2005 (24.02.2005)

PCT

(10) International Publication Number  
**WO 2005/018012 A1**

(51) International Patent Classification<sup>7</sup>: **H01L 51/30**,  
51/20

(21) International Application Number:  
PCT/EP2004/008105

(22) International Filing Date: 20 July 2004 (20.07.2004)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:  
03018466.7 14 August 2003 (14.08.2003) EP

(71) Applicant (for all designated States except US): **SONY  
INTERNATIONAL (EUROPE) GMBH** [DE/DE]; Kem-  
perplatz 1, 10785 Berlin (DE).

(72) Inventors; and

(75) Inventors/Applicants (for US only): **DÜRR, Michael**  
[DE/DE]; Friedensstr. 3, 73728 Esslingen (DE). **NELLES,**  
**Gabriele** [DE/DE]; Duisburgerstrasse 22, 70372 Stuttgart  
(DE). **YASUDA, Akio** [JP/DE]; Kastanienweg 50, 73732  
Esslingen (DE).

(74) Agents: **APPELT, Christian, W.** et al.; Boehmert &  
Boehmert, Hollerallee 32, 28209 Bremen (DE).

(81) Designated States (unless otherwise indicated, for every  
kind of national protection available): AE, AG, AL, AM,  
AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN,  
CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI,  
GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE,  
KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD,  
MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG,  
PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM,  
TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM,  
ZW.

(84) Designated States (unless otherwise indicated, for every  
kind of regional protection available): ARIPO (BW, GH,  
GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM,  
ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM),  
European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI,  
FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI,  
SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ,  
GW, ML, MR, NE, SN, TD, TG).

**Published:**

— with international search report

For two-letter codes and other abbreviations, refer to the "Guid-  
ance Notes on Codes and Abbreviations" appearing at the begin-  
ning of each regular issue of the PCT Gazette.

(54) Title: CARBON NANOTUBES BASED SOLAR CELLS

(57) Abstract: The invention relates to a photovoltaic device, uses of the photovoltaic device, combinations of this photovoltaic device with circuits and to a method of generating electricity from light using this photovoltaic device.

WO 2005/018012 A1